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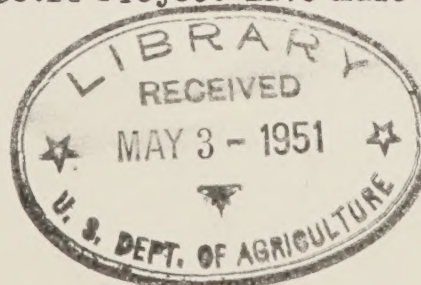
SUMMARY OF JAPANESE BEETLE TRAP-SCOUTING AND CONTROL ACTIVITIES, 1932 TO 1950.

Each year since 1940, when the last public conference was held on the Japanese beetle quarantine, a special report has been issued presenting the results of the trap-scouting of the current year outside of the regulated areas, and the related regulatory and retardation action. Also included in each report was a table showing previous collections in the same areas. These reports have been distributed widely to State plant pest officials and affected industry.

This year we are presenting a more comprehensive report for your review prior to the scheduled public hearing in March 1951. The report is attached. This year's report summarizes information obtained from annual scout-trapping activities since the first beetle collections were made in the Southern and Midwestern States in 1932. Intermittent surveys had been made in some of these areas as early as 1928 with special scouting in Michigan in 1925. The earliest beetle finds in these areas were made in 1932. During this 19-year period, varying numbers of traps were used up to 98,000. Traps now available are used mostly in cooperative surveys and there is a great amount of scouting by observation.

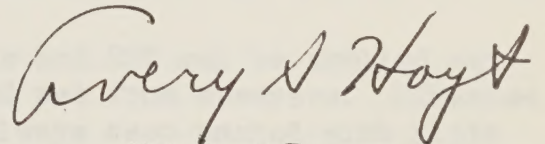
Trapping and scout inspection were extended west of the Mississippi River in 1934 when work was started in St. Louis, Mo. Some survey work has been done on a country-wide basis since 1938, when full-scale cooperation by Bureau field stations was started. More than 80% of the locations which have been surveyed to date are east of the Mississippi River. Approximately 3,600 localities in 42 states have been directly surveyed for the Japanese beetle over the years. Negative results were obtained in 3,267 inspected localities. All of the beetle collection locations are east of the Mississippi River except 2 in Kansas, 5 in Missouri, 1 in Iowa and 1 in Louisiana.

Bureau, State, Airforce, and local officials and personnel have participated in the annual surveys. Project and state personnel operating on a mutually participating cooperative basis did most of the work in and adjacent to the quarantined states and the isolated quarantine-control areas. Outside of these sections the work was almost entirely done by the cooperators in operating traps furnished by this project, mostly at military and commercial airfields. In addition, interested Bureau field workers, agriculturists, horticulturists and individuals have made incidental observations for the insect in various parts of the country. For example, for one or two years during the second World War the Bureau conducted special surveys throughout the country to check for possible imported pests; and for the past several years scouts of the White-fringed Beetle Project have made observations for



the Japanese beetle in their work areas. Likewise, state nursery inspectors, park employees, gardeners and hobbyists have been in a position to observe the beetle. The Japanese beetle has been featured in the plant pest exhibits at such places as State Fairs; park workers, greenkeepers and nurserymen's conventions; written up in nationally distributed periodicals; and, in addition to the Federal motion picture films on the beetle, several states have films or kodachrome slide series which are shown to various groups. Considering the number and extent of the observations possible, it seems unlikely that there can be many serious undiscovered sources of spread.

From 1934 through 1950, surface soil treatments have been applied to a total of more than 11,600 acres at 147 beetle collection locations in 16 states outside of the present Federal quarantine regulated area. Lead arsenate was used in all of these treatments until DDT became available, and during the past three years DDT has been used almost entirely except for small amounts of chlordane. DDT foliage treatments for beetle retardation have been used on an increasing scale during the past five years, and a total of 101 places has had foliage treatments either in conjunction with soil treatments or separately. Where necessary, state quarantine action paralleling the Federal quarantine regulations has been taken.



Chief of Bureau

REPORT OF KNOWN JAPANESE BEETLE OCCURRENCE OUTSIDE OF AREAS REGULATED
BY FEDERAL QUARANTINE, AND RELATED QUARANTINE RETARDATION ACTION

In order to attempt to retard the spread of the Japanese beetle, it has been necessary to know as much as possible about the occurrence of the insect in the United States. Our present knowledge, presented in the following pages, has been obtained by years of scouting and extensive and intensive trapping, largely on a cooperative basis between the Bureau of Entomology and Plant Quarantine, States, and the horticultural industries involved. When beetles have been found in a locality under conditions suggesting an infestation, and where there appeared to be some likelihood of spread from the locality, it has been necessary to consider extending the area of regulation under the quarantine or applying control measures.

Several field control treatments of definite effectiveness have been developed. These involve both surface soil treatments and foliage treatments. Early surface soil treatments were with lead arsenate, usually at the rate of 1,000 pounds per acre, but later the amount used was reduced to 500 pounds per acre. About 1946, when DDT became available, it was found to be well adapted to soil treatment. Much smaller quantities of DDT are as effective as the larger amounts of lead arsenate. DDT was used with increasing frequency, and has practically replaced lead arsenate in the soil treatment work. It is used at the rate of 25 pounds per acre as a surface soil treatment.

Surface soil treatments with both lead arsenate and DDT may be applied wet or dry but almost always they have been applied wet from sprayers. Likewise, areas treated with lead arsenate have almost always been washed with plain water after the application of the insecticide.

Foliage treatments have included DDT emulsion in water or DDT, kerosene, xylene solution and applied by mist-blower. Usually infestations are mist-blown once each three weeks during the flight period of the adult beetle.

Fourteen states and the District of Columbia are now under Federal quarantine. The District of Columbia and the States of Connecticut, Delaware, Maryland, Massachusetts, New Jersey, and Rhode Island are entirely under quarantine regulation. Therefore, there is no scout-trapping for dissemination or quarantine control treatment with Federal funds in these states, or the District of Columbia.

The information in this report refers only to known beetle occurrence and control work done in the States not under regulation, and in the non-regulated parts of the following states under Federal quarantine: Maine, New Hampshire, New York, Ohio, Pennsylvania, Vermont, Virginia, and West Virginia.

This report consists of a narrative type summary of known beetle occurrence and related work by states with supporting details in tabular form.

QUARANTINED STATES - PARTIALLY UNDER REGULATION

Maine - Placed under Federal quarantine 1933. Present regulated areas: small southern section and two isolated localities. Total unregulated localities which have been surveyed 52. Total negative 40. In addition the important plant growing establishments have been scouted.

Six of the 12 positive locations were first-record collections in 1950. Two beetles were found in one of these places and a single beetle was taken in each of the remaining 5. In three of the other 6 locations, 1 or 2 beetles were taken originally and no recurrence found. In Augusta and Bangor where from 1 to 9 beetles had been taken previously, no increase has been recorded. In Bar Harbor there have been collections of up to 40 beetles, with 20 in 1950. A total of nine acres in the large estate area has been soil treated.

New Hampshire - Placed under Federal quarantine 1933. Present regulated area about two-thirds of the State. Total unregulated localities which have been surveyed 17. Total negative 16. In addition, important plant growing establishments have been scouted.

The only recorded beetle collection location is Woodsville with only 1 to 2 beetles over the years.

Vermont - Placed under Federal quarantine 1933. Present regulated areas: lower half of state and one isolated locality. Total unregulated localities which have been surveyed 57. Negative 50. In addition, important plant growing establishments have been scouted.

Four of the 7 beetle collection locations were first records in 1950, and had from 1 to 4 beetles. There have been repeat collections in Montpelier with a high of 8 beetles in 1950; and in Barre which had a high of 21 beetles with 6 in 1950. A total of 6 acres have been soil treated in Barre.

New York - Placed under Federal quarantine 1926. Present regulated areas: all of southeastern section and a number of isolated areas. Total unregulated localities surveyed 381. Total negative 314. In addition, practically all plant growing establishments have been scouted.

In 45 of the 67 positive localities beetle collections were less than 10, with only a single beetle in 27 of these places. Many of these were first records in 1950, and the finds constituted recurrence in only 11 places.

Of the remaining localities, beetles are considered to be important in: Falconer, Chestertown, Geneva, and Spencerport which are being considered for extension of the federal regulated area; and Newark, Niagara Falls, Ogdensburg, Sodus Point and Williamson where soil treatments have been applied or are being considered.

There are two nurseries in Geneva on or adjacent to which a small number of Japanese beetles have been collected, and these are operating under state quarantine agreement based on federal regulations and supervised by a federal inspector.

Soil treatments have been applied to a total of 546 acres in 10 places in the State, and foliage treatments have been done in 6 places. Two hundred twenty-three acres of this total have been in Newark, where timely treatments have retarded beetle development. The first beetle was taken there in 1938, and annual collections have ranged from 1 to 126, except in 1947 when there were approximately 1500 beetles on and near a golf course. This golf course and environs were treated with DDT and no beetles were recovered in 1950. In 1950 about 350 beetles were taken at another site on the outskirts of the town. Repeat foliage treatments and soil treatment were applied. None of these beetles were on plant growing premises or close enough to require any regulatory action on nursery property. Several years ago some beetles were found on parts of a large nursery here. The establishment applied foliage and soil treatments, and the affected parts of the nursery were placed under state quarantine agreement with federal supervision. This agreement remained in effect until 1949 when it was rescinded, after repeated and intensive scouting showed no beetles. Subsequent to the treatments for the Japanese beetle, special DDT treatments were applied to almost 500 acres of this nursery for control of another insect.

Pennsylvania - Placed under Federal quarantine 1920. Present regulated area: entire state except small part in northwest. Total unregulated localities surveyed 20. Total negative 12. In addition, important plant growing establishments have been scouted.

Seven of the 8 collection locations were first records in 1950, all unimportant except North East with 53 beetles. North East and Greenville, where almost 400 beetles were found, are both being considered for inclusion in the regulated area.

Virginia - Placed under Federal quarantine 1929. Present regulated areas: eastern part of state with a number of isolated areas. Total unregulated localities surveyed 137. Total negative 91. In addition, important plant growing establishments have been scouted.

In one-half of the positive locations the recorded collections were small and all made in one year. There have been recurring small collections in all of the remaining places except in Bedford, Lovington, Galax, Ruckersville, Staunton, Victoria, Waynesboro and Wytheville, where from 90 to several hundred beetles have been found. Repeat DDT foliage treatments have been applied to each of these places for at least 2 years and up to 4 years, except that in Ruckersville there has been only one additional annual treatment. Soil treatment also has been applied to Waynesboro and Wytheville. In addition, foliage and soil treatments have been applied to some other places with a total of 68 acres in 9 localities soil treated and a total of 24 localities where repeat foliage treatments have been applied.

There are 3 nurseries in the unregulated portion of Virginia on or adjacent to which small numbers of beetles have been collected. These nurseries are under state quarantine agreement paralleling the Federal quarantine regulations and are supervised by Federal inspectors.

The State is considering this type of intensive foliage treatment and no extension of federal regulated area is being considered.

West Virginia - Placed under Federal quarantine 1933. Present regulated areas: northern part of state and a number of isolated localities. Total unregulated localities surveyed 110. Total negative 86. In addition, important plant growing establishments have been scouted.

Eight of the 24 collection locations are now under state quarantine regulation and the area involved is being considered for Federal regulation. Nine of the remaining 15 are first record locations for 1950, and finds were small except in two places with 51 and 109 respectively. In the remaining places control treatments have been applied or extension of the federal regulated areas is being considered. A total of 200 acres has been surface treated in West Virginia during the past years, and some foliage treatment has been applied.

Ohio - Placed under Federal quarantine 1937. Present regulated areas: eastern section and a few isolated localities. Total unregulated localities surveyed 481. Total negative 418. The bulk of the beetle collections are near regulated areas. From 1 to 5 beetles were taken in 30 of the 63 positive localities, and in this group there were 14 first record finds. There were less than 50 beetles taken in 17 of the other 33 places, while collections in the remaining localities range up to numerous. Soil treatments have been applied at 32 places for a total of about 1500 acres, and foliage treatments have been applied at 41 places. Extensions of Federal and State regulated areas are being considered. For several years from one to a few beetles have been found on or adjacent to a number of plant growing premises, mostly near the regulated areas. Each such establishment has been placed under state quarantine agreement with federal supervision, and in most cases the State has arranged for the application of quarantine soil treatments and some foliage treatments. Most of these establishments are in Lake County where there is a concentration of nurseries. Soil and foliage retardation treatments have also been applied to non-nursery premises in Lake County, especially in Madison and Perry Townships. Intensive repeat foliage treatments and state quarantine extension are planned for 1951 and additional federal personnel has been assigned to the area.

During 1948 numerous beetles were found on a City Park Department Nursery located just beyond the Cincinnati city limits, and on an adjacent small nursery doing a local business. Both of these nurseries were placed under state quarantine agreement with federal supervision. DDT and chlordane soil treatments and DDT foliage treatments were applied in 1948. DDT foliage treatments were re-applied in 1949 and 1950. The beetle population has been

reduced at the initial collection sites, but there are numerous beetles in nearby areas, and there is a scattering of beetles in parts of Cincinnati. There has been an intense local interest in this situation and considerable retardation work has been done. Consideration is now being given to the continuance of the retardation work and to the problems involved in the extension of quarantine regulation.

States Not Under Federal Quarantine
West of the Mississippi River

First survey in area 1934. Total localities scout inspected since then 819, including some locations in all states. In addition White-fringed beetle project personnel have made observations for the Japanese beetle in parts of Arkansas, Louisiana, Missouri and Texas. No beetles have been found in these states except in Iowa, Kansas, Louisiana and Missouri.

Iowa - First survey 1937. Total localities trap-scouted since then 26 all with negative results except in Ft. Madison where one beetle was found in 1938. Retrapping in 1939 was with negative results, but trapping in 1946 showed one beetle. No beetles found in 1947.

Kansas - First survey 1936. Total localities trap-scouted since then 39, all with negative results except in 1945 one beetle was found in Kansas City where rescouting in 1946 showed no beetles. In 1949 one beetle was taken at the Olathe Air Base near Kansas City. Rescouting in 1950 was negative.

Louisiana - First survey 1937. Total localities trap-scouted since then 28, all with negative results except in 1945 one beetle was found at the New Orleans Airport where retrapping each year through 1950 has been with negative results.

Missouri - First survey 1934. Total localities scout trapped since then 108, with additional observations by White-fringed Beetle Project personnel, and for several years the important nurseries in the State have been scouted annually. All negative results except a single beetle in the airport at Kansas City in 1944; and annual collections have been made in the St. Louis area since 1934 when 1,351 beetles were collected there. That year 500 acres were surface treated with lead arsenate. In 1935 in the treated area 904 beetles were taken, and 328 more were found beyond limits of treatment. That year a total of 96 acres was treated. In 1936 there were 14 beetles in the 1934 treated area, 59 in the 1935 treated area and 15 beyond the limits of treated areas. From 1937 through 1950 beetles have been taken every year with a range of from 1 to 59, and 23 in 1950. From 3 to 41 acres have been treated annually, but only 1 to 2 beetles have been collected intermittently from areas treated previously. A total of more than 900 acres has been soil treated, and there has been some DDT foliage treatment. A total of three beetles were found in two villages adjacent to the St. Louis Airport in 1949. Close trap scouting in 1950 was with negative results.

Scout Trapping West of the Mississippi

<u>STATE</u>	<u>YEARS</u>	<u>NUMBER OF LOCALITIES</u>
Arizona	1938-1950	19
Arkansas	1940-1950	5
California	1937-1950	304
Colorado	1937-1950	15
Idaho	1938-1950	13
Iowa	1937-1950	26
Kansas	1936-1950	39
Louisiana	1937-1950	28
Minnesota	1938-1950	69
Missouri	1934-1950	108
Montana	1938-1950	6
Nebraska	1937-1950	6
Nevada	1945-1950	4
New Mexico	1938-1950	11
North Dakota	1938-1950	3
Oklahoma	1945-1950	6
Oregon	1938-1950	10
South Dakota	1946-1950	2
Texas	1938-1950	100
Utah	1938-1950	12
Washington	1938-1950	29
Wisconsin	1937-1950	36
Wyoming	1938-1950	4

Trapping negative in all states except Missouri, Iowa, Kansas, and Louisiana. The number of localities does not indicate either the frequency of trapping or the number of traps used.

East of the Mississippi River

In this area beetles have been found in every state except Alabama, Mississippi and Wisconsin. Since the first surveys in 1937 and 1938, a total of 116 localities was scout-inspected in Alabama; 64 in Mississippi and 36 in Wisconsin. Additional observations have been made in various states by inspectors of the White-fringed Beetle Project.

Florida - First survey 1932. Total places scout-inspected 105, negative 99. Additional observations in parts of Florida by White-fringed Beetle Project field men. Three beetles were taken in traps at the Miami 36th St. Airport and a single beetle at the airport in West Palm Beach and Valparaiso Airport. A few beetles were found in the cities of Jacksonville, Miami, and Tampa. Eight acres in Jacksonville were surface treated with lead arsenate in 1944. In 1950 there was a rather extensive cooperative scout-trap program in the State with negative results at all localities.

Georgia - First survey in 1931. Total places scout-inspected 220. Negative results 208. In addition, field workers of the White-fringed Beetle Project made observations for the Japanese beetle in the work area of that project, including nurseries. A single beetle was found in Warner-Robins Airfield, Macon; a single beetle in each of three years at Hunter Field, Savannah. From 1 to 11 beetles have been found in Augusta during repeated surveys since 1936. A single beetle was collected in each of two years in Savannah, and a total of 3 beetles was taken in Gainesville in eight annual surveys. Toccoa showed 1 to 21 beetles in eight annual surveys. In Atlanta annual scout-inspections in 1937 and 1938 showed from 6 to 122 beetles, from 1939 to 1949 from 4 to 40 beetles. At the Atlanta Airport area 142 and 137 beetles were found in 1939 and 1940, and from one to 28 beetles from 1941 to 1949.

In 1950 there were increased numbers of beetles in Atlanta and in the suburban area including the airport and environs. A total of 236 beetles was taken in two separate sections in the city. Four hundred and five beetles were taken in one section of the Atlanta Airport and in the environs. Foliage treatments were applied as soon as beetles were noted and repeated as needed. Sixty-three acres were surface treated with DDT and chlordane at the two beetle collection locations in Atlanta and in the suburban area including the airport.

Intermittent scout inspection at Austell in the six-year period from 1945 to 1950 resulted in collections upwards to 53, the 1950 collection. Eight acres were surface treated with DDT in Austell in 1950 and foliage treatments were also made. In 1950 beetle collections in Dahlgren, where numerous beetles had been reported and soil foliage treatments applied previously, totalled 146, and 9 acres were surface treated with DDT. A total of 231 acres in 7 localities have been soil treated and foliage treatments have also been made.

South Carolina - First survey 1931. Total places scout-inspected 154. Negative results 145. Personnel of the White-fringed beetle project made observations for the Japanese beetle in additional localities in their work area. A single beetle was taken in each of 2 communities, repeat collections of a single beetle in another location, and from 1 to 12 beetles in eleven annual surveys in Charleston. In Florence collections ranged from 1 to 76 in 15 annual surveys, and in Greenville 15 annual surveys showed from 1 to 89 beetles. In Spartanburg 1 to 3 beetles were found between 1941 and 1950 in 11 annual surveys. Repeated trapping at the Charleston airport showed 1 to 3 beetles; and at Greenville Airbase 1 and 6 beetles. Soil treatments have been applied at Charleston, Florence and Greenville, to a total of about 40 acres, and some DDT foliage treating was also done.

Kentucky - First survey 1936. Total places scout-inspected 100. Negative 93. Observations for the Japanese beetle were also made by personnel of the White-fringed Beetle Project. Thirteen beetles were taken this year in Dayton and 3 in Newport. In 1949 one beetle was taken in Covington. These places are adjacent to Cincinnati, Ohio. Fifty-one beetles were taken in Russell where 5 acres were soil treated. A single beetle was found in each of 3 years at Lexington. There were beetle collections in Louisville in nine intermittent annual surveys prior to this year ranging from 1 to 62 beetles. Two hundred and seventy-nine beetles were collected in Louisville in 1950 in four separate sections. Foliage and soil treatments were applied. In 1949, 7 beetles were found in Shively just south of Louisville. No beetles were found in Shively this year. Soil treatments totalling 114 acres have been applied in the State. Most of the nurseries were scouted in 1950.

Tennessee - First survey 1936. Total places scout-inspected 131. Negative 125. In addition, White-fringed beetle field workers have made observations for the Japanese beetle. One to two beetles were collected in two intermittent surveys at the Memphis Airport, and a single beetle was taken at the Nashville Airport in two successive years. Rescouting at these airports has been with negative results. From 1 to 6 beetles showed in Bristol, Kingsport, Knoxville, and Mountain City. Soil treatments totalling 10 acres were applied in Bristol, Kingsport and Mountain City. All commercial nurseries were scouted in 1950 with negative results.

Indiana - First survey 1932. Total places scout-inspected 113. Negative results 96. One beetle was found in Bedford, East Chicago and Muncie, 2 in Newcastle and three were taken in Bluffton. No beetles were taken at any of these places on the last rescouting. One beetle was taken in Jeffersonville as a first record this year. In the remaining 11 places, where beetles have been found in repeated surveys over the years, soil treatments have been applied. This year in Fort Wayne there were increased collections, mostly from a new area, and only 37 were taken in Indianapolis and none at Richmond. DDT soil treatment was applied to approximately 173 acres in the state this fall. Total acreage treated since 1934 approximates 1,273 and there has been some DDT foliage treatment. Some examples and the

indicated results are, in Indianapolis lead arsenate soil treatments were applied to the initial beetle collection area in 1934 and repeated surveys in that section of the city since 1937 have been with negative results. At Richmond in 1942, 558 beetles were taken, soil treatments applied and the only recollections in that area were 17 beetles in 1943 and 2 in 1944. In 1940, 60 beetles were found in Warsaw; soil treatments were applied and in 1941 only 2 beetles were taken and no recurrence since. In 1950 all commercial nurseries were scouted with negative results.

Illinois - First surveyed in 1931. Total localities scout-inspected 146. Negative 133. From 1 to 5 beetles have been taken in Argo, Bloomington, Elgin, Highwood, Lake Forest, Oak Park and Summit. No treatments have been applied in these localities. In 1934 one beetle was taken in East St. Louis, and repeated surveys over 15 years showed from 1 to 24 beetles. Soil treatment has been applied to 16 acres there, and during 1950 when 24 beetles were taken foliage applications were applied. In Evanston up to 20 beetles were taken from 1937 to 1939, and 22 acres were surface soil treated with lead arsenate. No beetles were found in the most recent surveys.

Six beetles were found in Chicago in 1934, thirty-nine beetles in 1935, and 3,740 beetles in 1936. Initial lead arsenate soil treatments were applied in 1936 to 94 acres. In 1936 approximately 1,400 beetles were found in the Bessemer Park section of the city, and 2 years after soil treatment only 41 beetles were taken and by 1940 beetles were reduced to 4, with no recurrence since. Surface soil treatments have been repeated in Chicago every year since 1936, covering an average of about 100 acres, or a total of about 1500 acres. In 1937 Chicago beetle collections were reduced to less than 400 and from then through 1944, annual inspections showed from about 100 to 700 beetles. Since 1946 when 165 beetles were taken, beetle finds have declined and only 30 were collected in 1950.

More than 5,000 beetles were found in one section of Highland Park in 1941. Timely application of lead arsenate was made to 77 acres, and only 173 beetles were found the next year when soil treatment was made to an additional 20 acres. In 1943, beetles there declined to 63 and an additional 28 acres were soil treated. Since then, scout inspection in that section of Highland Park showed 10 beetles in 1944, five in 1945 and none since.

In 1947, in another part of Highland Park, 140 beetles were found; soil and foliage treatments were applied, with no recurrence since 1948. Soil treatments with lead arsenate and DDT total about 1,739 acres. Thirty-seven beetles were taken at Decatur in 1950, and DDT has been applied to 38 acres. Quarantine treatments were applied to a greenhouse property adjacent to collections in Decatur. In 1950 all commercial nurseries were scouted with negative results.

Michigan - First survey 1930. Total localities scout-inspected 91. Negative 73. There have been collections of a few beetles in one year only in 7 places and recurrence in 11 other places. The first-record find in Detroit was in 1932 with 8 beetles. Trapping has been done there each year since then, and the trapping has extended to all suburbs. Some beetles have been collected in 11 Detroit suburban communities. There have also been beetle collections in Flint, Grand Rapids, Kalamazoo and Muskegon. Soil treatment has been applied to every beetle collection community in the state except Pontiac and Ecorse. First soil treatments in Detroit were made in 1936, and have been continued annually to a total of about 1,000 acres in the city. Over the years the beetle finds in Detroit have ranged from 4 to 252 annually except in 1947 when more than 3,000 were taken in one area adjacent to River Rouge. Timely application of soil and foliage treatments has controlled this infestation. Ninety-six beetles showed in Detroit surveys in 1948, 172 in 1949, and 21 in 1950. In Detroit suburbs there were from 1 to 50 beetles annually except in River Rouge where 278 beetles were found in 1945. About 135 acres have been treated in River Rouge, and 60 beetles were found there in 1950. Outside of Detroit and suburbs the largest beetle finds have been in Flint, Grand Rapids and Kalamazoo, and the beetles have numbered less than 100 except for one year in Grand Rapids when 166 were found. Soil treatment has been done in all of these places and in Muskegon where only 7 beetles showed and in Owosso with 1. The total acreage surface soil treated in the State is more than 1900. Extensive foliage treatments have also been done in the past four years. Nurseries were scouted in 1950.

North Carolina - The first specimens of the Japanese beetle recorded from North Carolina were collected in 1932 at Winston-Salem, Raleigh and Durham. Repeated annual scout-inspections at various places in the State during the next few years resulted in the collection of small numbers of beetles at an increased number of localities throughout the State. The first collection records showing large numbers of beetles, from 200 to 300, were in 1937 at Winston-Salem, Greensboro, Spencer and East Spencer. The established infestations at Asheville, Hendersonville and Blowing Rock were found during the period 1939 and 1943, and those in the vicinity of Calypso, Mount Olive, Pantego and Castle Hayne showed up during the 1947, '48 and '49 seasons.

During the earlier parts of the scout inspection surveys large numbers of traps were used and mostly in urban areas, but following the collections in the eastern rural areas in 1947, less emphasis was placed on trapping and there was more actual scouting, especially of nurseries and other plant growing establishments. This policy was continued until in 1949 the only traps were the small numbers used by the area scouts. Each area scout was responsible for the inspection of all plant growing establishments in his area and, in addition, he did as much roadside and country scouting as possible. Thirty-six localities were trapped in 1950.

The results of the nursery scouting during 1949 and 1950 showed no Japanese beetles on or near premises except in one or two locations which have been under State regulation. In 1949 there were ten such scout areas in the State, outside of the White-fringed beetle project work area. In addition to the scouting by these ten special area scouts, the field employees of the White-fringed beetle searched for the Japanese beetle in their work area. Nursery scouting was continued in 1950.

The first state quarantine action was in 1936 when the Winston-Salem, Greensboro-Salisbury areas were placed under regulation. Additional areas were added until now there are: two main areas in the East - Pantego and Wilmington; isolated areas in the central part; and Blowing Rock, and the Asheville-Hendersonville areas in the West. The State quarantine requirements are based on the Federal quarantine, and certification work has been under the general supervision of the Federal inspector.

No control work was done until 1941 when the lead arsenate treatments were started. About 3,000 acres have been treated with lead arsenate and later with DDT in a total of 33 different localities. In addition to the soil treatments, biological controls were applied in the Hendersonville-Asheville areas, and DDT foliage treatments have been applied in various places since 1946.

Summary Table of Control Treatments
in Areas Still Unregulated

<u>State</u>	<u>Soil Treatment Only</u>	<u>Combined Soil and Foliage Treatment</u>	<u>Foliage Treatment Only</u>
Florida	1	-	-
Georgia	3	4	-
Illinois	4	2	-
Indiana	11	1	-
Iowa	-	-	-
Kansas	-	-	-
Kentucky	-	3	-
Louisiana	-	-	-
Maine	1	-	-
Michigan	12	4	-
Missouri	4	1	-
New Hampshire	-	-	-
New York	7	3	3
North Carolina	27	6	12
Ohio	7	25	16
Pennsylvania	-	-	-
South Carolina	3	-	2
Tennessee	3	-	-
Vermont	1	-	-
Virginia	2	7	17
West Virginia	4	1	-

SUMMARY OF JAPANESE BEETLE SCOUT INSPECTION AND TREATMENTS
OUTSIDE REGULATED AREA THROUGH 1950

<u>State</u>	<u>No. Localities Inspected</u> <u>Negative</u>	<u>Positive</u>	<u>No. Localities</u> <u>Foliage Treatment</u>	<u>No. Localities</u> <u>Soil Treatment</u>	<u>No. Acres</u> <u>Soil Treated</u>
Alabama	116				
Arizona	19				
Arkansas	5				
California	304				
Colorado	15				
Florida	99	6		1	8
Georgia	208	12	4	7	231
Idaho	13				
Illinois	133	13	2	6	1,739
Indiana	96	17	1	12	1,273
Iowa	25	1			
Kansas	37	2			
Kentucky	93	7	3	3	114
Louisiana	27	1			
Maine	40	12		1	9
Michigan	73	18	4	16	1,968
Minnesota	69				
Mississippi	64				
Missouri	103	5	1	5	910
Montana	6				
Nebraska	6				
Nevada	4				
New Hampshire	16	1			
New Mexico	11				
New York	314	67	6	10	546
North Carolina	242	78	12	33	3,000
North Dakota	3				
Ohio	418	63	41	32	1,497
Oklahoma	6				
Oregon	10				
Pennsylvania	12	8			
South Carolina	145	9	2	3	40
South Dakota	2				
Tennessee	125	6		3	10
Texas	100				
Utah	12				
Vermont	50	7		1	6
Virginia	91	46	24	9	68
Washington	29				
West Virginia	86	24	1	5	200
Wisconsin	36				
Wyoming	4				
Totals	3,267	403	101	147	11,610

In addition to the number of localities listed above, the White-fringed Beetle Project field personnel made observations for the Japanese beetle in more than 400 counties in Ala., Ark., Fla., Ga., Ill., Ky., La., Miss., Mo., N.C., S.C., Tenn. and Texas.

N - Numerous - Over 500 Beetles				F - Foliage Treatment				S - Soil Treatment			
STATE & LOCALITY	1950	No. Beetles	Between : Years	Acres : S	F	STATE & LOCALITY	1950	No. Beetles	Between : Years	Acres : S	F
<u>KENTUCKY</u>											
Covington	0	1	1949			Cont'd					
Dayton	13	1	1949-50			Kalamazoo	1	1	63	1945-50	114
Lexington	-	1	1936-38			Lincoln Park	0	2		1942	4
Louisville	279	1	1936-50	85	1	Melvindale	0	1	5	1939-46	15
Newport	3	3	1950		1	Muskegon	-	1	7	1945-46	10
Russell	51	51	1950	5	1	Owosso	0	1		1948	1
Shively	0	7	1949	24	1	Pontiac	-	1		1938	
						River Rouge	60	1	278	1942-50	135
						Wyandotte	-	1		1946	6
<u>LOUISIANA</u>											
New Orleans						MISSOURI					
Airport	0	1	1945			Kansas City					
						Airport	0	1		1944	2
<u>MAINE</u>											
Augusta	1	1	1932-50			Bridgeton	0	1		1949	
Bangor	3	1	1935-50			Robertson	0	2		1949	
Bar Harbor	20	4	1940-50	9		St. Louis	23	1	N	1934-50	*896
Bath	0	2	1938			Lambert Field	0	1	3	1940-48	12
Brunswick	0	1	1938			(St. Louis)					
Ellsworth	0	1	1938			*896 acres includes			49 treatments at	Robertson	
Livemore Fls	1	1	1950			NEW HAMPSHIRE					
Oldtown	1	1	1950			Woodsville	2	1	2	1933-50	
Rumford	1	1	1950								
Skowhegan	1	1	1950			NEW YORK					
Topsham	2	2	1950			Albion	0	1		1938	
Wiscasset	1	1	1950			Alexander Bay	-	1		1941	
						Angola	2	2		1950	
						Avon	0	18	196	1941-43	8
						Batavia		1	8	1939-50	
						Bath	22	2	22	1942-50	
						Brockport	26	26	7	1950	
						Canandaigua	7	2		1938-50	
						Canton	1	1		1950	
						Central Square	1	1		1950	
						Chesterstown	73	2	73	1944-50	
						Cohocton	1	1		1950	
						Dansville	7	1	116	1938-50	20
						Dundee	-	1		1939	
						Dunkirk	2	1	11	1932-50	
						E. Aurora	0	1		1933	
<u>MICHIGAN</u>											
Birmingham											
Dearborn	1	1	1936-50	42							
Detroit	21	4	1932-50	1010	4						
Ecorse	0	6	1945								
Flint	-	11	1942-44	92							
Grand Rapids	19	9	1945-50	397							
Grosse Point	0	5	1939	2							
Farms											
Grosse Pt Pk	1	1	1947-50	66	1						
Grosse Pt. Vil.	1	1	1948-50	59	1						
Highland Park	-	2	1938	1							

N - Numerous - Over 500 Beetles										F - Foliage Treatment										S - Soil Treatment									
STATE &	LOCALITY	1950	No. Beetles	Between	Acres	Years	S	F	LOCALITY	1950	No. Beetles	Between	Acres	Years	S	F	LOCALITY	1950	No. Beetles	Between	Acres	Years	S	F					
NO. CAROLINA																													
	Cont'd.																												
	Fayetteville	68	1	1933-50	68				:Old Fort	-	1			:1944															
	Fletcher	-	10	1946-48*					:Oteen	-	82			N :1944-48*															
	Gastonia	43	4	1942-50	106		81		:Oxford	4	1			4 :1935-50															
	Goldsboro	11	1	1935-50	11		8		:Pantego	F	N			:1948 *															
	Greensboro	-	1	1933-36*	15		362		:Raleigh	14	2			200 :1932-50															
	Greenville	1	1	1948-50	4				:Reidsville	42	2			42 :1942-50															
	Hamlet	58	1	1938-50	58				:Rocky Mount	11	1			26 :1933-50															
	Henderson	100	2	1933-50	100				:Rocky Point	-	6			:1949-50*															
	Hendersonville:	F	5	1941-42*	N		182		:Rose Hill	-	158			:1948 *															
	Hickory	6	2	1944-50	6				:Salisbury	-	1			5 :1933-36*															
	High Point	-	1	1935-48*	N		262		:Sanford	11	2			38 :1935-50															
	Ingold	-	5	1948 *					:Spencer	-	4			54 :1933-36*															
	Kannapolis	4	1	1945-50	4				:Spruce Pine	-	6			:1944															
	Kinston	5	1	1938-50	5				:Statesville	0	1			1 :1935-43															
	Landis	0	3	1945					:Tarboro	1	1			1 :1940-50															
	Lenoir	17	1	1944-50	17		3		:Thomasville	-	1			88 :1938-48*															
	Lexington	4	1	1933-50	11				:Turkey	-	2			:1948															
	Lumberton	-	1	1935					:Wake Forest	0	1			:1935															
	Magnolia	-	9	1948 *					:Wallace	-	13			:1948 *															
	Marion	25 F	25	1950					:Warsaw	-	2			10 :1944-48*															
	Marshall	0	1	1944					:Washington	-	1			5 :1933-48*															
	Mayodan	16	1	1945-50	16				:Waynesville	2	1			2 :1942-50															
	Mt. Olive	F	2	1944-48*	N		23		:Weldon	9	3			13 :1940-50															
	Moyock	N	9	1949-50	N				:W. Jefferson	-	2			63 :1944-48															
	Murfreesboro	1	1	1933-50	1				:Wilkinson	F	N			:1948 *															
	New Bern	1	1	1948-50	3				:Wilmington	-	2			90 :1933-50*															
	No. Wilkesboro:	1	1	1944-50	1				:Wilson	N	1			N :1936-50															
									:Winston-Salem	-	4			109 :1932-36*															

* Year under State Quarantine

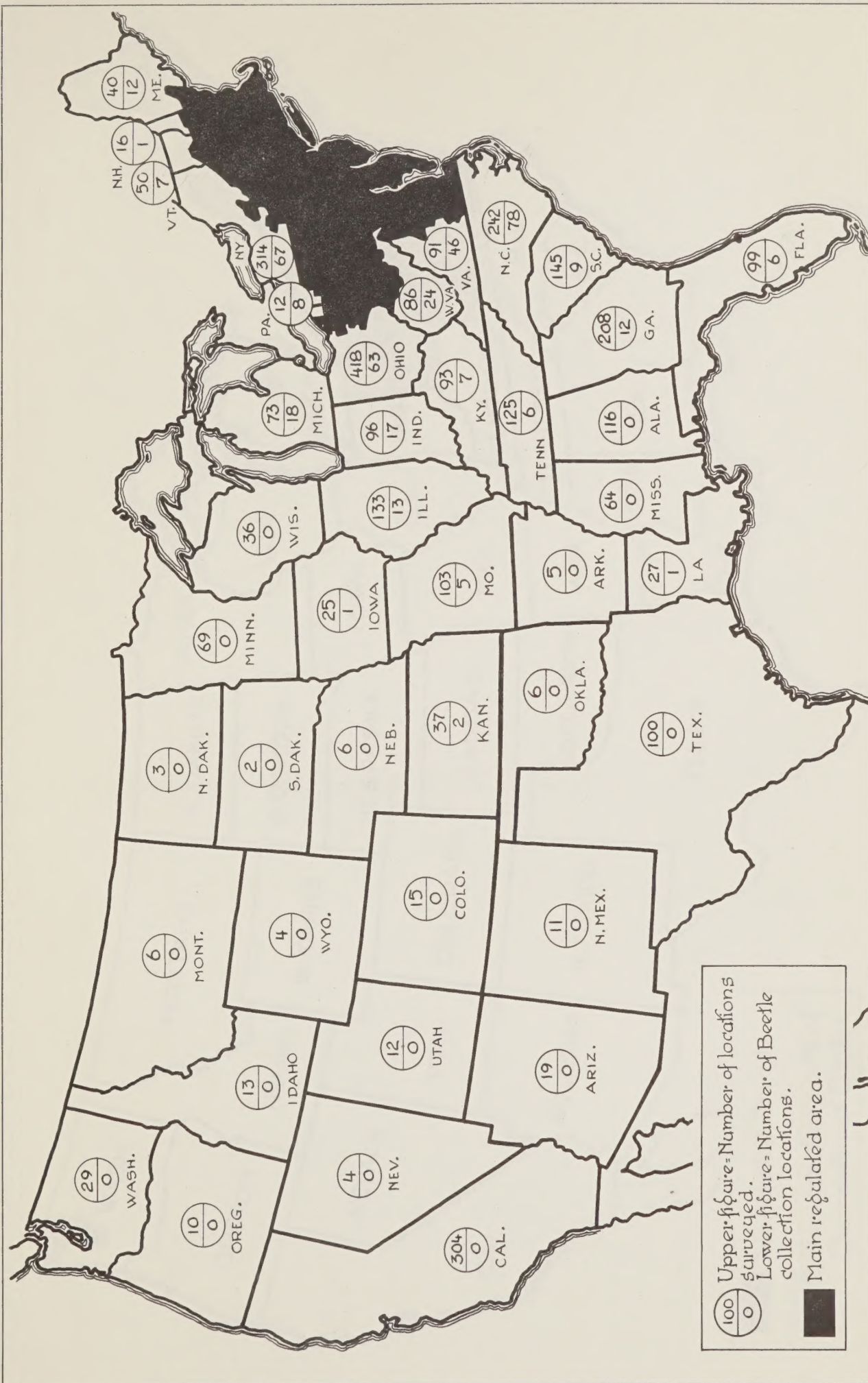
N - Numerous - Over 500 Beetles										F - Foliage Treatment										S - Soil Treatments										
STATE & LOCALITY	1950	Low	High	Years	Between	Acres	S	F	Years	STATE & LOCALITY	1950	Low	High	Years	Between	Acres	S	F	Years	STATE & LOCALITY	1950	Low	High	Years	Between	Acres	S	F	Years	
OHIO																														
Andover	1 F	1		1950				1		Millersburg	19 F	1	29	1941-50																
Ashland	0	1	23	1944-45		22				Monroe County	N		N	1950																
Athens	2 F	1	2	1940-50				2		Mt. Vernon	40 F	1	40	1942-50																
Bellevue	33 F	2	218	1942-50		195		4		Muskingum Twp.																				
Belpre	N F	9	N	1938-50		88		4		(Muskingum Co.)	N		N	1950																
Brice	9 F	1	9	1949-50		13		1		Nashport	30 F	1	30	1949-50																
Bucyrus	0	1	6	1940-49		8		2		Nelsonville	0	1	2	1942-43																
Caldwell	141 F	1	141	1941-50		6		3		New Concord	15 F	1	45	1940-50																
Chardon	0	2	2	1948-49				2		New Matamoras	28		28	1950																
*Chesapeake	0	1	1	1945						Norwalk	-	1	1	1940-42																
Chesterland	55 F	2	55	1949-50		11		1		Painesville	443 F	5	443	1944-50																
Chillicothe	48 F	1	48	1935-50		12		4		Patterson Fld.	0		2	1948																
Cincinnati	N F	1	N	1937-50		124		3		(Fairborne)																				
Clipper Mills	4	4		1950						Perry Township	N SF	5	N	1947-50																
Crestline	13 F	1	27	1942-50		105		4		Rockbridge	0	1	167	1942-44																
Elyria	40 SF	1	40	1939-50		52		4		Sandusky	0	1	2	1938-48																
Fairborne	0	4	4	1949						Sharon Twp.																				
Falls Twp.										(Franklin Co.)	-		10	1947																
(Muskingum Co.)	5 F	5	5	1950				1		Shelby	0		1	1944																
Fly	22	22		1950						S. Zanesville	13 F	4	N	1941-50																
Fostoria	0	1	2	1943-44		2				Springfield	0	1	1	1945-48																
Fowlers Mill	-	1	1	1943		2				Tiffin	0		1	1942																
Gallipolis	N F	7	N	1936-50		173		4		Van Wert	0	1	1	1941-44																
Geneva	200 F	7	200	1944-50		14		4		Washington CH	0		1	1933																
Hamilton	0	1	2	1945-48				1		Wellington	0		1	1944																
Hanover	5 F	5	5	1950				1		Willard	2 F	1	17	1943-50																
Irville	7 F	7	7	1950				1		Zanesville	41 F	1	41	1932-50																
Islette	4 F	4	4	1950				1																						
Kinsman	4 F	1		1946-50				1																						
Lancaster	0	2	2	1935																										
Lima	0	1	1	1943-47		5		1		PENNSYLVANIA																				
Lorain	1 F	1	9	1942-50		33		3		Albion	8		8	1950																
Loudonville	100 F	3	169	1945-50		3		4		Cambridge Spg.	1		1	1950																
Lowell	4	4		1950						Conneaut Lake	3		3	1950																
Madison	N F	N	N	1950		80		1		Fairview	1		1	1950																
Marion	0	1	50	1942-47		100		2		Greenville	388	1	388	1939-50																
Maumee	0	1	1	1946						Girard	8		8	1950																
McConnelville	0		1	1948				1		Linesville	1		1	1950																
Middleport	2 F	2	2	1950				1		North East	53		53	1950																
Middletown	1 F	1	1	1950				1																						




* Huntington, West Virginia Airport

N - Numerous - Over 500 Beetles										F - Foliage Treatment					S - Soil Treatment						
STATE & LOCALITY	1950	No. Beetles	Between	Acres	Years	STATE & LOCALITY	1950	No. Beetles	Between	Acres	Years	STATE & LOCALITY	1950	No. Beetles	Between	Acres	Years				
SO. CAROLINA																					
Charleston	0	1	12	1931-43	12	VIRGINIA															
Charleston Apt.	0	1	3	1945-46		Cont'd															
Chesnee	0	1		1947		:Cartersville														1	1948
Columbia	0	1	1	1942-45		:Chase City														1	1948
Florence		1	76	1932-50	5	:Chilhowie														2	1949
Greenville	78	1	89	1933-50	23	:Covesville												38	38	63	1949-50
Greenville AB	0	1	6	1946-47		:Crewe														16	1948
Spartanburg	3	1	3	1941-50		:Crozet														5	1946-48
Sumter	0	1		1942		:Dayton														2	1942-47
																				4	1948
																				7	1948
																				N	1950
																				2	1950
TENNESSEE																					
Bristol	0	1	6	1936-49	1	:Fairfield															
Kingsport	-	5		1943	7	:Farmville															
Knoxville	0	1		1948		:Galax															
Memphis Air.	0	1	2	1945-48		:Gretna														N	1945-50
Mountain City	0	2	6	1944-46	2	:Harrisonburg														1	1948
Nashville Air.	0	1	1	1946-47		:Independence														1	1947
																				23	1943
																				5	1946-47
																				7	1932-50
																				10	1946
VERMONT																					
Barre	6	1	21	1941-50	6	:Madison														10	1946
Hardwick	1	1		1950		:Marion															
Montpelier	8	1	8	1941-50		:Mt. Airy														-	1950
Richmond	-	1		1944		:Mt. Jackson														1	1941-47
St. Albans	4	4		1950		:Natural Bridge														3	1950
St. Johnsbury	1	1		1950		:New Market														1	1938-48
Wells River	2	2		1950		:Rocky Mount														3	1945-47
																				12	1948-49
																				1	1937-48
																				143	1933-48
VIRGINIA																				11	1940-48
Amherst	9	2	18	1946-50		:Staunton															1949
Appomattox	-	6		1948		:Strasburg														4	1940
Bedford	N	1	N	1945-50	4	:Sweet Briar														1	1950
Blacksburg		1	1	1949		:Timberville														-	1948
Blackstone	0	1	1	1948		:Union Hall															
Bridgewater	0	1	1	1945		:Victoria														119	1948
Bristol	0	1	24	1936-49	2	:Waynesboro														222	1935-48
Broadway	0	8		1946		:Woodstock														67	1940-48
Brookneal	0	-	-	1950		:Wytheville														94	1945-49
Buena Vista	0	1		1937																	

N - Numerous - Over 500 Beetles				F - Foliage Treatment				S - Soil Treatment			
STATE &	1950	No. Beetles : Low	High	Between : Years	Acres : S	Years : F					
LOCALITY											
WEST VIRGINIA											
Beaver	0	6		1949							
Beckley	204 S	10	204	1943-50	71						
Bluefield	347	9	347	1943-50	10						
Capon Bridge	2	2		1950*							
Franklin -											
Pendleton Co.	2	2		1950							
Gassaway	N F	3	N	1945-50	9	1					
Henderson	109	109		1950							
Huntington	334 S	1	334	1935-50*	80						
Levels	N	N		1950*							
Moorefield	14	14		1950							
Okonoko	-	N		1948-50*							
Petersburg	-	23	N	1946-49							
Points	8	8		1950*							
Pt. Pleasant	51	51		1950							
Ravenswood	1	1		1950							
Ripley	1	1		1950							
Romney	64	6	64	1946-50*							
Saint Albans	0	1		1942							
Springfield	116	116		1950*							
Sutton	2	2		1950							
Three Churches:	5	5	N	1948-50*							
Wardensville	11	11		1950							
Webster Spngs.	17	17		1950							
White Sulphur											
Springs	9 S	3	9	1949-50	30						

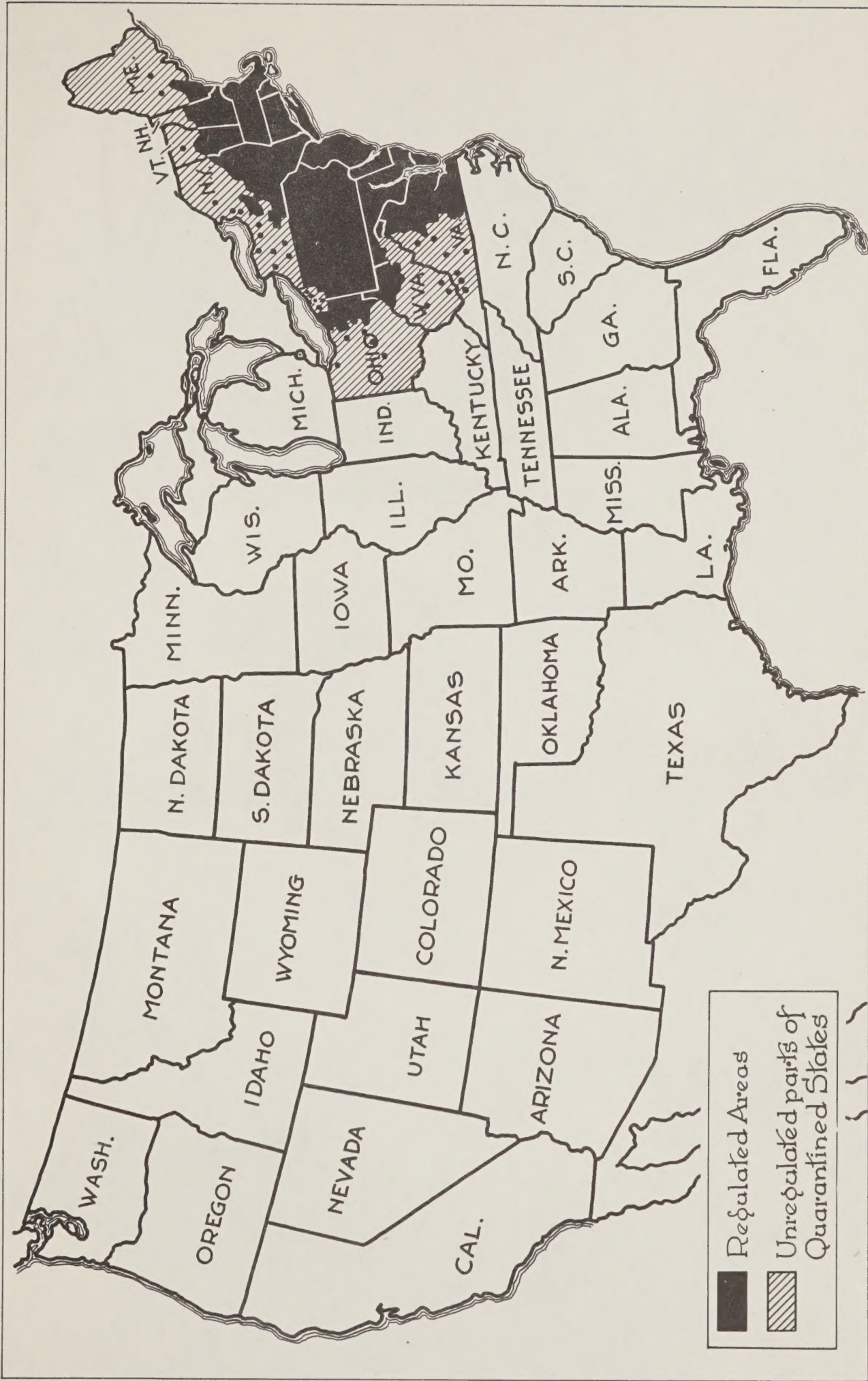
* Year Placed Under State Quarantine.



 Upper figure = Number of locations surveyed.
 Lower figure = Number of Beetle collection locations.
 Main regulated area.

FEDERAL JAPANESE BEETLE QUARANTINE AREAS

DECEMBER 26, 1950



CHARTERED 1904

THE NATIONAL GEOGRAPHIC SOCIETY



THE NATIONAL GEOGRAPHIC SOCIETY
WASHINGTON, D. C.
1904